



The VTAC Committee:

Site-Specific Riparian Management Guidance Documents

Michael Liquori, VTAC Chair
and others...

March 6, 2013



VTAC Participants

● **Members**

- Mike Liquori, SWC (Chair)
- Peter Ribar, CTM
- Dr. Kevin Boston, OSU
- Dr. Matt O'Connor, OEI
- Dr. Kate Sullivan, HRC
(*through 2011, now USEPA*)
- Mark Lancaster, 5C
- Richard Gienger, public
- Dave Hope, Consultant

● **Agency Representatives**

- Bill Short, CGS
- Bill Stevens, NMFS
- Bryan McFadin, NCRWQCB
- Drew Coe, CVRWQCB
- Stacy Stanish, Kevin Shaffer, Dr. Stephen Swales, DFW
- Pete Cafferata, CAL FIRE

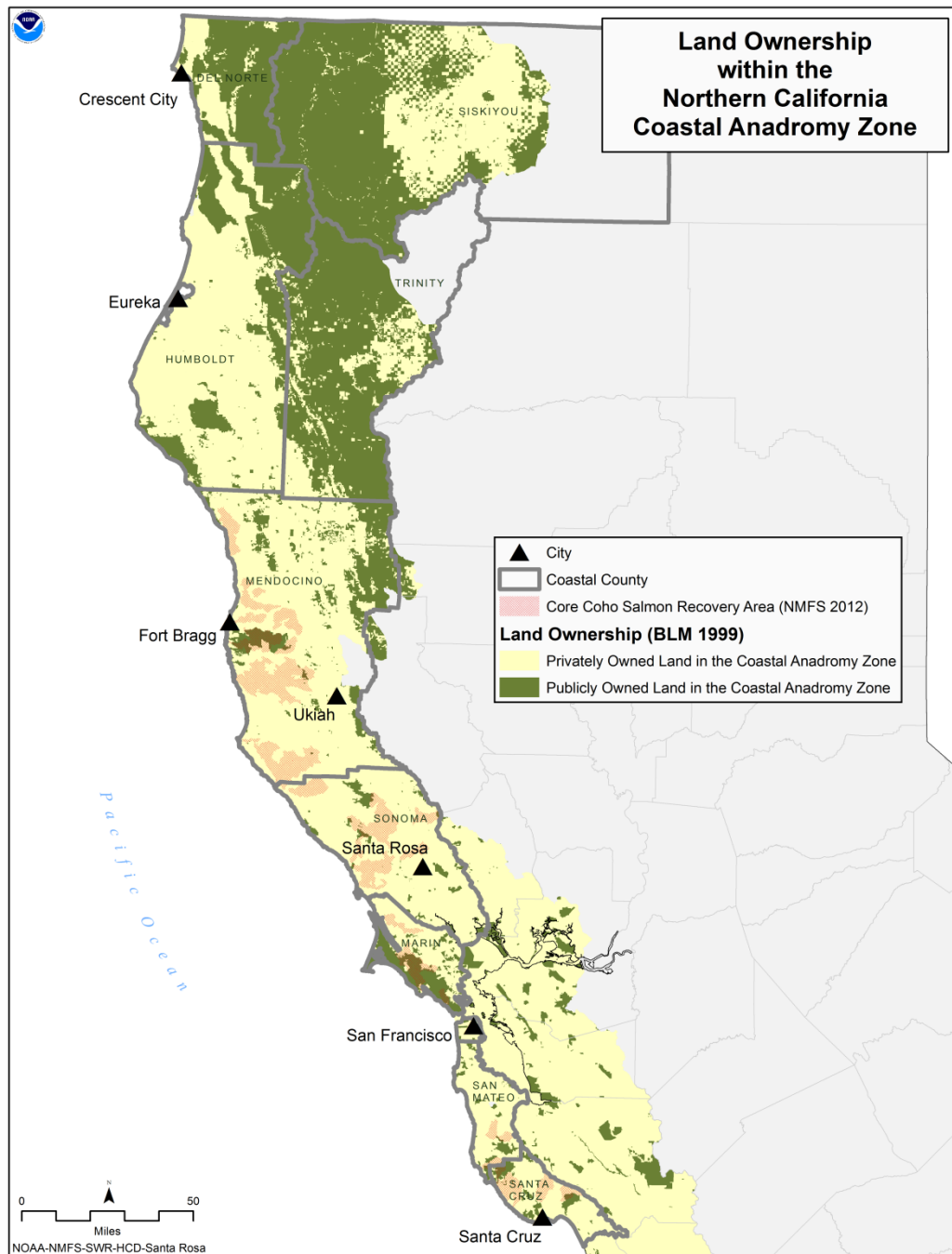
● **CAL FIRE/BOF Assistance**

- Crawford Tuttle (through 2011)
- Bill Snyder
- Duane Shintaku
- Dennis Hall
- George Gentry



Presentation Outline

- 1. Background Information**
- 2. Board Framework**
- 3. VTAC Guidance Document Overview**
- 4. Next Steps: Pilot Projects**
- 5. Key Outstanding Challenges (unscoped)**



Private and Public Land Ownership within the Coastal Anadromy Zone

85-90% of remaining CCC coho salmon exist on private forestlands



Technical Basis for ASP Rules

Mike Liquori

Doug Martin

Robert Coats

Lee Benda

David Ganz

Sound Watershed Consulting
Creating Functional Water Environments



**Scientific Literature Review of Forest
Management Effects on Riparian
Functions for Anadromous Salmonids**

Chapter 1
INTRODUCTION

for
***The California State Board of
Forestry and Fire Protection***

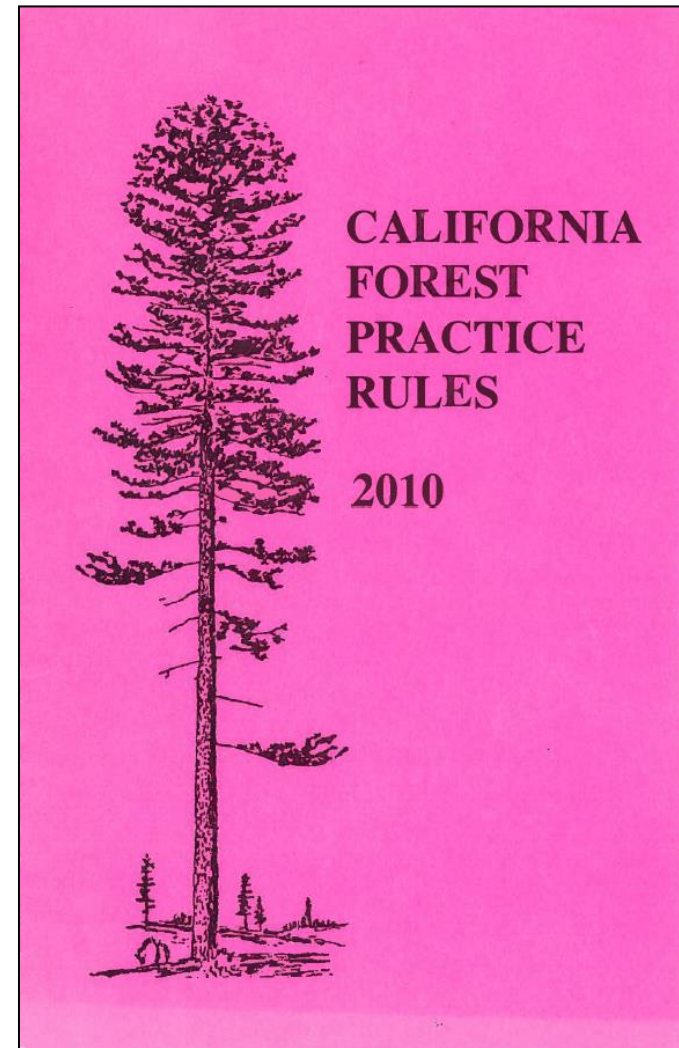
September 2008





1. ASP Rule 14 CCR § 916.9(v)

Section (v) of the
2009 ASP rules
established a
regulatory
pathway for
voluntary site-
specific riparian
design





Section V Rules achieve riparian goals through **spatially-explicit, context-specific objectives**

Established by actual site conditions, not rule assumptions



*Board
Framework for
Guidance Documents*



ASP Rule 14 CCR § 916.9(v)

- based on scientific principles
- watershed or stream reach scale
- promote more immediate short-term functional responses



- ① Principles, guidelines & procedures
- ② Permitting efficiencies
- ③ Reduce regulatory uncertainty
- ④ Broaden Incentives



- **Oct 2010 thru Dec 2012**
 - ✓ 15 meetings
 - ✓ Stakeholder Survey
 - ✓ 2 Field Tours
 - ✓ Pre-Consultation Guidelines
 - ✓ Guidance Document
- **2013 Pilot Phase**
 - ✓ 1-2 representatives / project
 - ✓ Informal email and conference call updates

Site-Specific Riparian Zone Management:

Section V Guidance



Anadromous Salmonid Protection Rule Section V

Technical Advisory Committee (VTAC)

December 2012

Sacramento, California





Guidance Document Structure & Organization



Table of Contents

- I. Introduction
- II. Goals, Incentives & Desired Outcomes
- III. Conceptual Framework
- IV. Pre-Consultation Guidelines
- V. Introduction to Analytical Pathways
 - I. Classification Matrix
 - II. Situational Scenarios
 - III. Analytical Design
- VI. Submission Requirements
- VII. Proposal Processing
- VIII. Monitoring Strategies
- IX. References

Appendices

- Analytical Pathways
 - Standardized Rule Matrix (and example)
 - Situational Scenarios (and example)
 - Analytical Design Process
- Pre-Consultation Guidelines Form
- Watershed Context Information
- Channel Type Definitions
- ASP Rules/Map
- Channel Type Definitions and Diagrams
- Glossary



Management Objectives

Management	Objective	Suitability Criteria
Protect	Minimize disturbance to allow natural recovery	Sites on the trajectory toward recovery
Maintain	Maintain riparian-dependent exchange functions	Sites where function status is rated good.
Improve	Improve performance or response timing for one or more key riparian-dependent functions.	Sites where there is potential to promote/enhance aquatic ecological services
Restore	Restore riparian-dependent functions to levels necessary for sustaining aquatic ecological services.	Sites where function status is rated fair to poor, and where delivery potential is rated medium to high.
Generally Available	Provide flexibility in addressing other higher-priority issues	Existing conditions and trends that indicate low sensitivity to a particular variable.



CAL FIRE

California Forest Improvement Program
(CFIP)

Forest Legacy Program (FLP)

California Forest Stewardship Program

SWRCB 319(h), other grants

Calif. State Parks

Habitat Conservation Fund grants

Land and Water Conservation Fund grants

USDA

Conservation Reserve Program

NRCS

Environmental Quality Incentives Program

Wildlife Habitat Incentive Program (WHIP)

Conservation Technical Assistance (CTA)

Wetlands Reserve Program (WRP)

US EPA

Region 9 grants and funding

Wildlife Conservation Board





VTAC Pre-Consultation Guidelines

- Quickly determine the potential success of a proposed Section (v) project
- Structured Form (field handout)
- Voluntary
- Does not receive formal agency approval



SECTION V
PROJECT TYPES

```
graph LR; A[SECTION V PROJECT TYPES] --> B[LIMITED SPATIAL EXTENT  
14 CCR § 916.9(v)(2)  
936.9(v)(2),  
956.9(v)(2)]; A --> C[LARGER-SCALE PROJECTS  
14 CCR § 916.9(v)(3)  
936.9(v)(3),  
956.9(v)(3)]; B --> D[DFW CONCURRENCE]; C --> E[CLASSIFICATION MATRIX]; C --> F[SITUATIONAL SCENARIOS]; C --> G[ANALYTICAL DESIGN];
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LIMITED SPATIAL
EXTENT
14 CCR § 916.9(v)(2)
936.9(v)(2),
956.9(v)(2)

DFW
CONCURRENCE

LARGER-SCALE
PROJECTS
14 CCR § 916.9(v)(3)
936.9(v)(3),
956.9(v)(3)

CLASSIFICATION
MATRIX

SITUATIONAL
SCENARIOS

ANALYTICAL
DESIGN



Pathway 1) Classification Matrix Approach

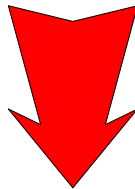


- A relatively simple assessment procedure
 - Generally applicable goals
 - Common ecological processes & functions
 - Sets priorities among functions
- The project scale is relatively small
- Detailed technical expertise is cost-prohibitive

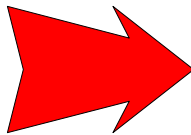


Rule Matrix

Riparian Classification

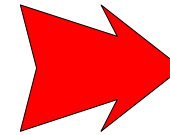


Geomorphic Classification



		Site Condition		
		Good	Fair	Poor
Functional Priority	High	Protect	Maintain	Improve
	Mod.	Maintain	Improve	Improve
	Low	Generally Available	Generally Available	Maintain

Rule Matrix



Segment Objectives

Segment Objectives				
	Wood	Temperature	Nutrients	Erosion
Protect	Maximize retention of recruitable wood	Maximize retention of vegetation that blocks incoming solar radiation	Maximize retention of existing high nutrient vegetation	Prevent and avoid ground disturbances that may disturb banks and/or concentrate runoff
Maintain	Minimize removal of recruitable wood	Minimize reduction in shade	Minimize reduction in nutrient supply	Minimize ground disturbances that may disturb banks and/or concentrate runoff
Improve	Carefully identify individual tree selection that encourage desired silvicultural responses	Carefully identify individual tree selection that minimizes reduction in shade	Encourage treatments that promote balanced primary production and establishment of high nutrient species	Consider treatments that support recovery of eroding lands (e.g. planting, biotechnical stabilization, etc)
Generally Available	Treatment constraints for this function are minimized	Treatment constraints for this function are minimized	Treatment constraints for this function are minimized	Treatment constraints for this function are minimized



Geomorphic Classification

			Functional Priority Rating			
Class	Size	Type*	Wood	Temperature	Nutrients	Erosion
I	Large	Regime	Moderate	Low	Low	High
		Braided	Moderate	Low	Low	High
		Pool Riffle	High	Low	Low	High
	Medium	Regime	Moderate	Moderate	High	High
		Braided	Moderate	Moderate	High	High
		Pool Riffle	Moderate	Moderate	High	High
		Forced Pool Riffle	High	Moderate	High	High
		Plane Bed	High	High	High	Moderate
		Step-Pool	Moderate	High	Moderate	Low
		Cascade	Low	High	Moderate	Low
		Small	Pool Riffle	High	High	High
	Forced Pool Riffle		High	High	High	High
	Plane Bed		High	High	High	Moderate
	Step-Pool		Moderate	High	Moderate	Low
	Cascade		Low	High	Moderate	Low
	II	All	Pool Riffle	Moderate	Moderate	Moderate
Forced Pool Riffle			High	Moderate	Moderate	High
Plane Bed			Low	Moderate	Low	Moderate
Step-Pool			Low	Moderate	Low	Low
Cascade			Low	Moderate	Low	Low
III	All	Colluvial	Varied	Moderate	Low	Varied
Hotspots	All	Debris Flow Sources	High	Moderate	Low	High
		Debris/alluvial Fans	High	Moderate	Low	High
		Tributary Junctions	Moderate	Moderate	High	Moderate
		Class II Transition	Low	High	High	Moderate
		Sensitivity Zone	75% SPTH	33 feet	66 feet	Variable <i>(min 33 feet)</i>



Inherent Riparian Function

Composition of Vegetation

C = Conifer [$\geq 70\%$ conifer]

H = Hardwood [$\geq 70\%$ hardwood]

M = Mixed [all other cases]

Relative Tree Size

S = Smaller than functional

L = Larger than functional

M = Mixed

Relative Stand Density

D = Differentiating (active mortality)

F = Fully Stocked (mortality eminent)

U = Under stocked (open, active growth)

Riparian Class	Inherent Functional Levels		
	Wood Supply	Nutrient Supply	Thermal Loading
C S D	Moderate	Poor	Good
C S F	Poor	Poor	Good
C S U	Poor	Moderate	Moderate
C L D	Good	Moderate	Good
C L F	Good	Moderate	Good
C L U	Moderate	Moderate	Moderate
C M D	Good	Moderate	Good
C M F	Good	Moderate	Good
C M U	Moderate	Moderate	Moderate
H S D	Moderate	Good	Good
H S F	Poor	Good	Good
H S U	Poor	Good	Moderate
H L D	Moderate	Good	Good
H L F	Poor	Good	Good
H L U	Poor	Good	Moderate
H M D	Moderate	Good	Good
H M F	Poor	Good	Good
H M U	Poor	Good	Moderate
M S D	Moderate	Moderate	Good
M S F	Moderate	Moderate	Good
M S U	Poor	Good	Moderate
M L D	Good	Moderate	Good
M L F	Good	Good	Good
M L U	Moderate	Good	Moderate
M M D	Good	Good	Good
M M F	Good	Good	Good
M M U	Moderate	Good	Moderate



Rule Matrix

		Riparian Classification			
		Site Condition			
		Good	Fair	Poor	
Channel Classification	Functional Priority	High	Protect	Maintain	Improve
		Mod.	Maintain	Improve	Improve
		Low	Generally Available	Generally Available	Maintain

Wood	Temperature	Nutrients	Erosion
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Segment Objectives

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P1 Submission Requirements

- 1. Description of the current riparian condition**
- 2. Description of the evaluation area (watershed scale)**
- 3. Identification of beneficial functions**
- 4. Evaluation of design effects to the beneficial functions**
- 5. Description of the site-specific proposal**
- 6. Implementation schedule**
- 7. Simple monitoring plan**



Pathway 2) *Situational Scenarios*



- Common situations
- Use of 3rd-party recovery documents to provide the context and project goals
 - NMFS 2012 – Recovery Plan Documents
 - Habitat Conservation Plans
 - Watershed Analyses
 - etc



For each Situation Scenario:

- **Overview**
- **Typical Suitability Criteria**
- **Design Factors to Consider**
- **Treatment Options**
- **Hazards (red-flags)**
- **Hypothetical Example(s)**
- **Submission Requirements**

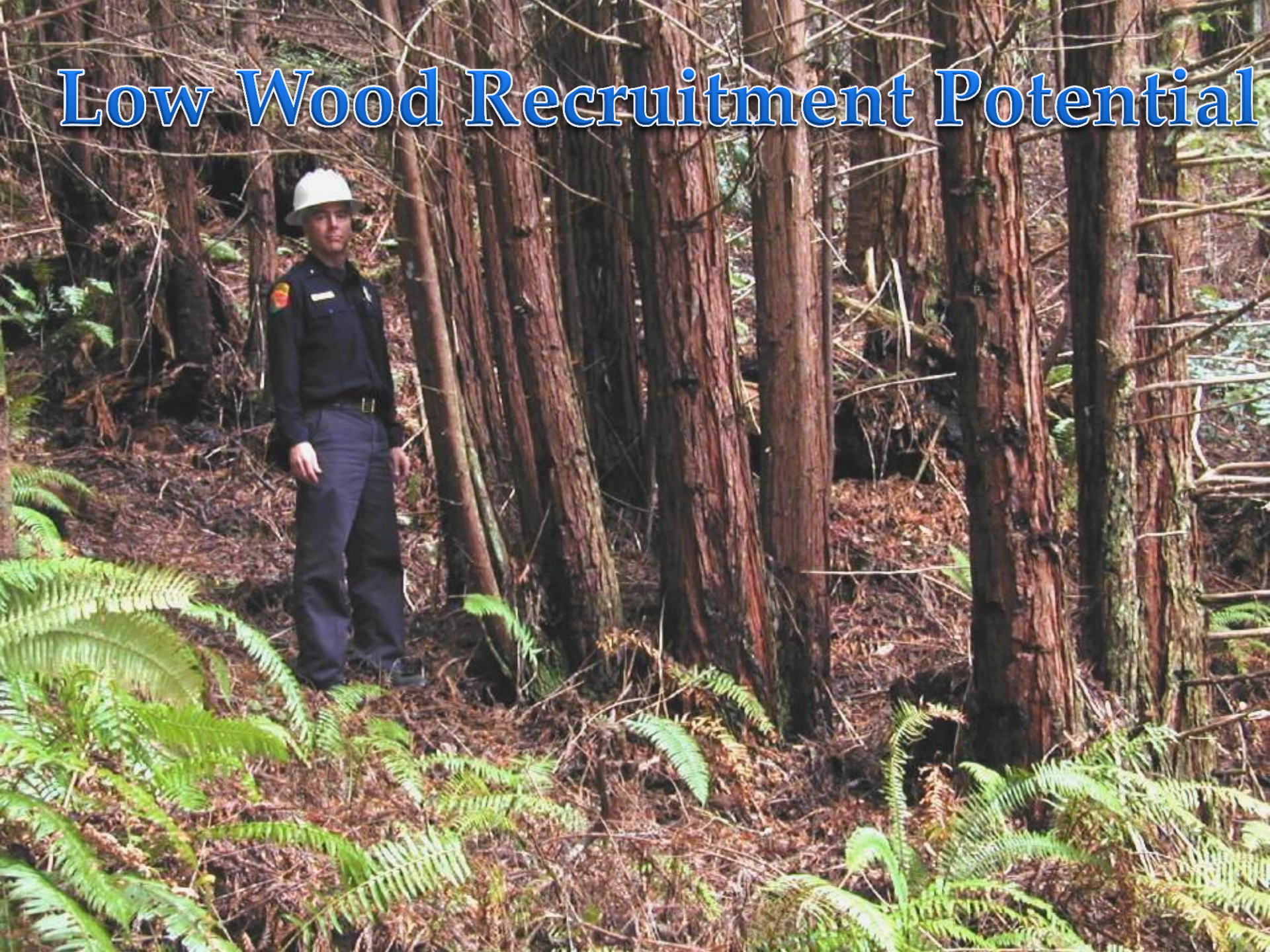
1) Low LWD Loading + Low Riparian Mortality



2. Headcutting and/or Incised Channels



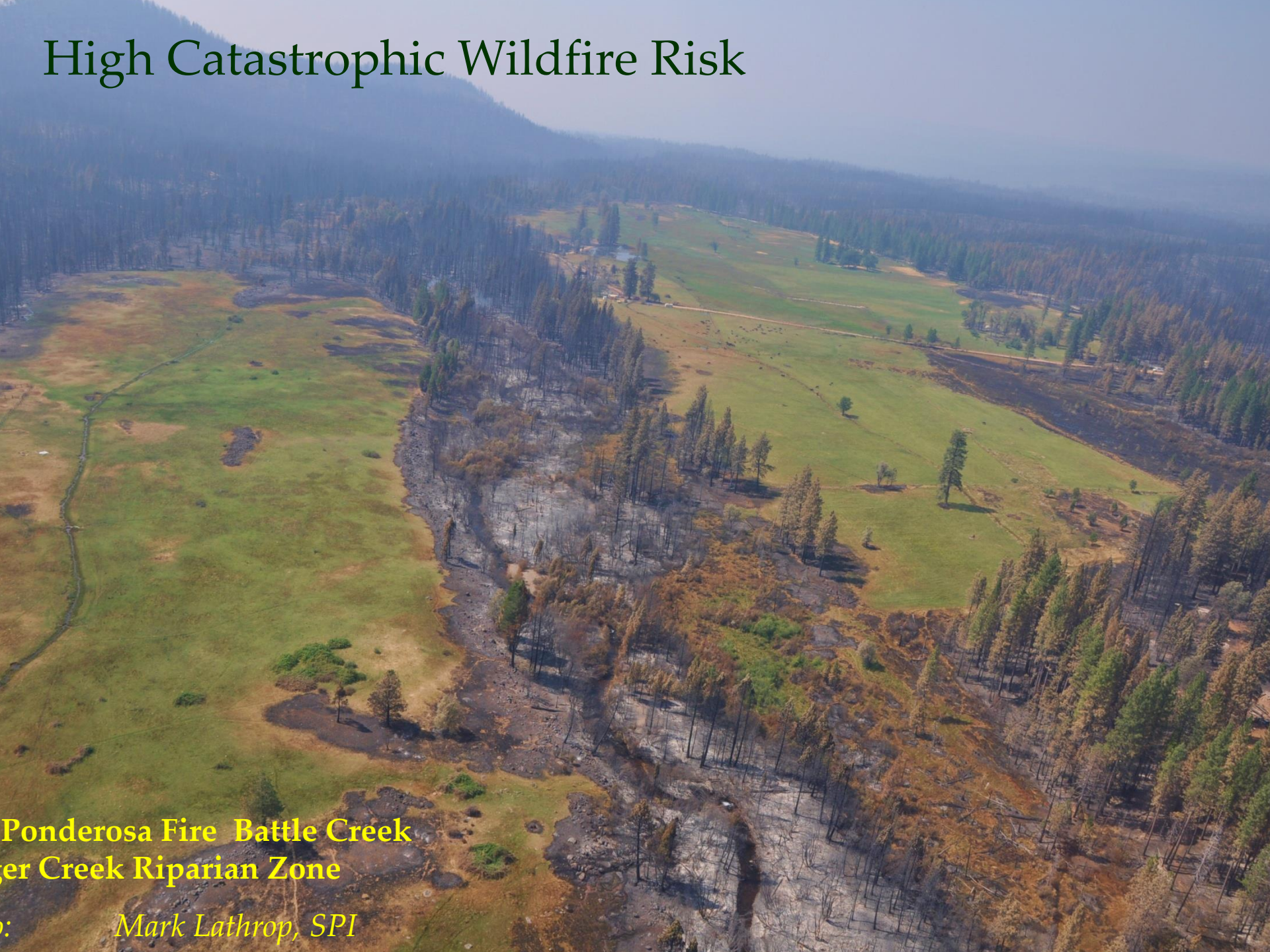
Low Wood Recruitment Potential



High Catastrophic Wildfire Risk

Ponderosa Fire Battle Creek
Riparian Zone

Mark Lathrop, SPI





Relatively Closed
Canopy Riparian
Corridors lacking
Nitrogen-Fixing
Species or with
Low Primary
Productivity

*Parlin Creek, Jackson Demonstration State Forest
Mendocino County*



Biotic Diversity & Nutrients

- a sufficient number of nitrogen-fixing deciduous trees *distributed at key locations within the stream network*;
- a sufficient number of riparian canopy gaps that support primary and aquatic macroinvertebrate production while balancing effects on other riparian functions.

(Wilzbach et al. 2005; Kiffney and Roni 2007; Modenke and Ver Linden 2007; Poor and McDonnell, 2007; others)

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Creating Functional Water Environments



Scientific Literature Review of Forest Management Effects on Riparian Functions for Anadromous Salmonids

Chapter 2 BIOTIC & NUTRIENTS

*for
The California State Board of
Forestry and Fire Protection*

September 2008

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(510) 927-2099
www.soundwatershed.com

Hydrology
Geomorphology
River Ecology
Restoration Design
Sustainable Forestry
Integrated Watershed Management



6. Sediment Reduction within Riparian Zones



Submission Requirements

1. Evaluate existing site conditions.
2. Assess watershed conditions.
 - Use existing information sources, CI assessment
3. Determine desired ecological functions.
4. Identify the applicable situational scenario.
5. Determine if additional expertise is needed.
6. Additional considerations.
 - Issues to address Section (v) analysis requirements:
 - Identification of the potential effects to beneficial functions.
 - Detailed description

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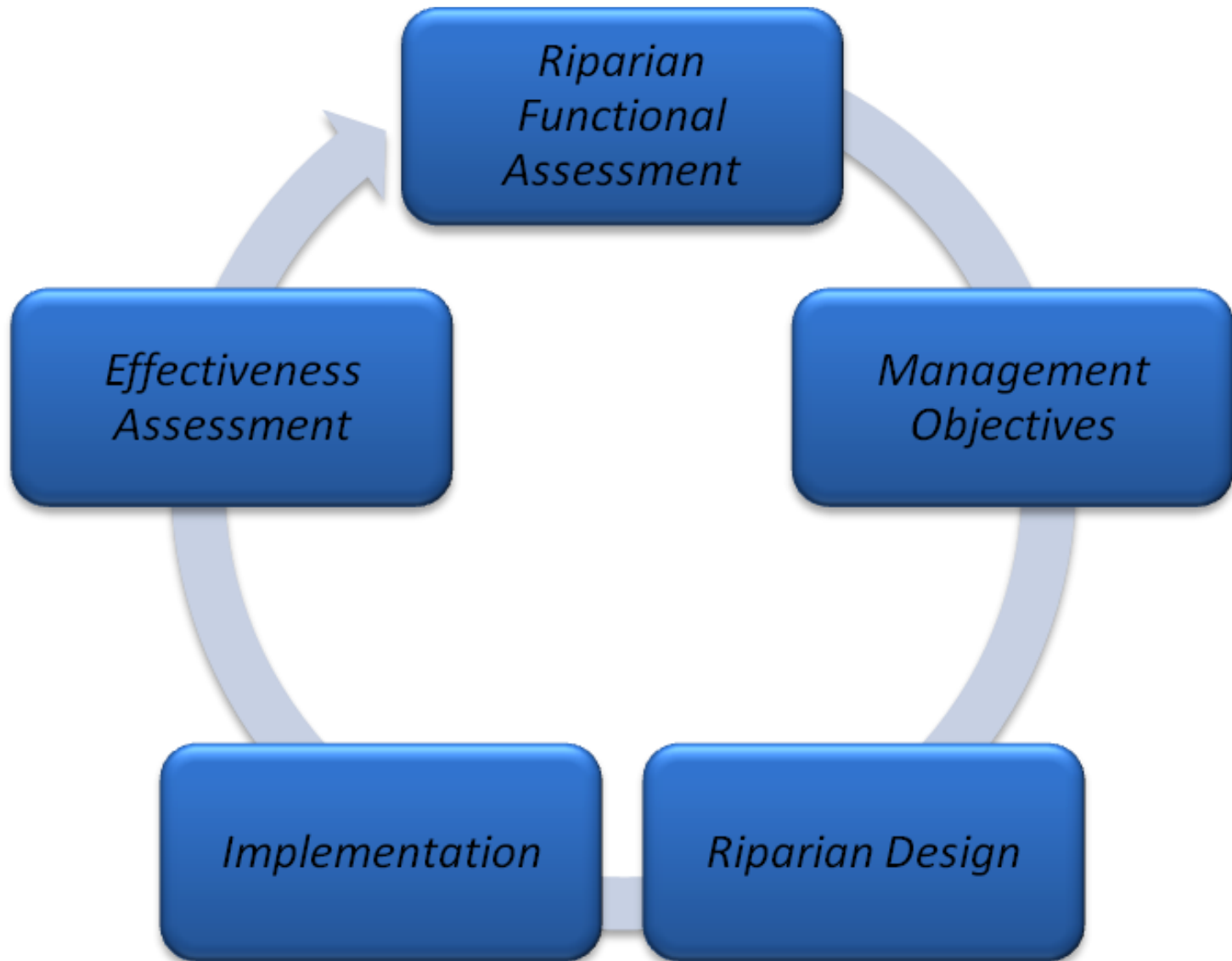
Pathway 3) Analytical Design



- Conflicting Goals or Complex Issues
- Existing planning reports
 - Direct or adjacent
- Technical Experts and/or Robust Datasets
- Large-scale analysis
- Pathways I or II are not appropriate



Analytical Design



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Other Key Elements



- **SECTION V RULE LANGUAGE**
- **PRE-CONSULTATION GUIDELINES**
- **MAP OF THE ASP RULE GEOGRAPHIC SCOPE**
- **WATERSHED CONTEXT INFORMATION**
- **CHANNEL TYPE DEFINITIONS AND DIAGRAMS**
- **EXAMPLE USING THE CLASSIFICATION MATRIX
PATHWAY**



- **RPF/Landowner and Agency training sessions.**
 - Summer and Fall 2013.
 - RPF/landowner sessions to be field oriented.
- **VTAC website for RPF/landowner education.**

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CA.GOV Board of Forestry and Fire Protection

BOARD HOME ABOUT US REGULATIONS REGISTERED FORESTERS PREVENTION FEE

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Board of Forestry and Fire Protection

The Board's mission is to lead California in developing policies and programs that serve the public interest in environmentally, economically, and socially sustainable management of forest and rangelands, and a fire protection system that protects and serves the people of the state.

VTAC

The VTAC is a technical advisory committee formed for the development of: (1) multiple pilot projects that use site-specific information and measures to protect and restore the beneficial functions of the riparian zone in watersheds with listed anadromous salmonids, (2) recommendations to the CAL FIRE Director regarding implementation guidelines for spatially explicit riparian projects, and (3) final recommendations to the State Board of Forestry and Fire Protection (BOF) regarding guidance document development for spatially explicit riparian management. [1] The VTAC will also track implementation through CAL FIRE progress reports.

[1] Anadromous salmonid protection (ASP) rule 14 CCR § 916.9 [936.9, 956.9](v)(10) specifies the following: Board staff and the Department shall work with agencies, stakeholders, and appropriate scientific participants (e.g., Monitoring Study Group, Technical Advisory Committee) in a transparent process to: (1) describe and implement two pilot projects, including monitored results, using site-specific or non-standard operational provisions; and (2) provide recommendations to the Board for consideration for adoption to provide detailed guidance for the application of site-specific or non-standard operational provisions. The pilot projects and guidance shall address cumulative and planning watershed impacts, and the guidance may address the appropriate standards the site-specific or non-operational provisions shall meet. A report on the progress of the pilot projects and implementation guidance shall be presented to the Board within 18 months of the effective date of this regulation.

MAIN LINKS SUBSCRIBE

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BOARD COMMITTEES LINKS SUBSCRIBE

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- Resource Protection Committee
- Forest Practice Committee
- Policy Committee
- Management Committee
- Range Management Advisory Committee
- Technical Advisory Committee
- Interagency Forestry Working Group
- Research and Science Committee
- VTAC

http://www.bof.fire.ca.gov/board_committees/vtac/

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*Next Steps
Pilot Projects*



VTAC Potential Pilot Projects

A. Green Diamond Resource Company

- Canopy gaps & other studies

B. Campbell Timberland Management

- Wood loading

C. Collins Pine Company

- Fire Risk

D. LaTour Demonstration State Forest

- Fire Risk

E. Jackson Demonstration State Forest??



Recent THPs with Site-Specific Mgmt

Coast Ranges Region

- **Slaughterhouse THP** (1-10-020 MEN), submitted by Campbell Timberland Management.
 - 17 large wood enhancement sites (35 trees felled).
- **Kestrel THP** (1-11-087 SON), submitted by Gualala Redwoods, Inc.
 - 4 large redwood trees to be excavated or felled into dry part of SF Gualala River.
 - Done under DFW 1600 Agreement; requested by Review Team agencies.
- **Piccolotti THP** (1-10-030 MEN), submitted by The Conservation Fund
 - Per CDFW requirement, the 50 foot wide no-cut zone adjacent to Big River will be subjected to a limited understory thinning conducted to increase individual conifer growth rates.



Recent THPs with Site-Specific Mgmt

Northern Interior Region (V2 Pre-Consultation with DFW)

- **Maidenhair THP**, 2-10-031 TEH, submitted by SPI.
 - Standard (non-ASP) width WLPZs for Class I and II watercourses, with no operations in the buffers.
- **North McMullen THP**, 2-10-049 SHA, submitted by LaTour Demonstration State Forest.
 - 75 foot no-cut Class I WLPZ.
- **Tower THP**, 2-10-056-SHA, submitted by W.M. Beaty and Associates.
 - 50 to 100 foot Class I WLPZs based on slope, with 50% overstory canopy retention.
- **Howard Springs THP**, 2-10-082 TEH, submitted by SPI.
 - 100 foot Class I WLPZs in 2 units, with a 50 foot no-cut for the first 50 feet and 50% overstory canopy retention for the second 50 feet.

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Outstanding Challenges



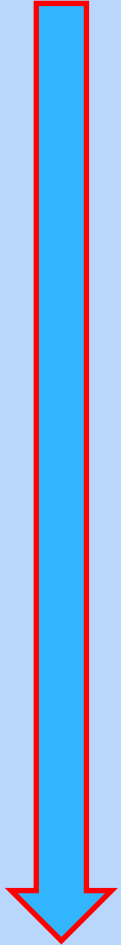
- New Practices
- Sensitive Resource

Integrated Monitoring Strategy





Simple



Complex

- Compliance – Did they do it as designed?
- Implementation – Did the action lead to the desired effect (or not)?
- Effectiveness – Does the effect support the ecology?
- Validation – are our assumptions correct?



**effective, systematic
monitoring is beyond any
single landowner**

**We need a coordinated
approach.**

(provides incentive too...)

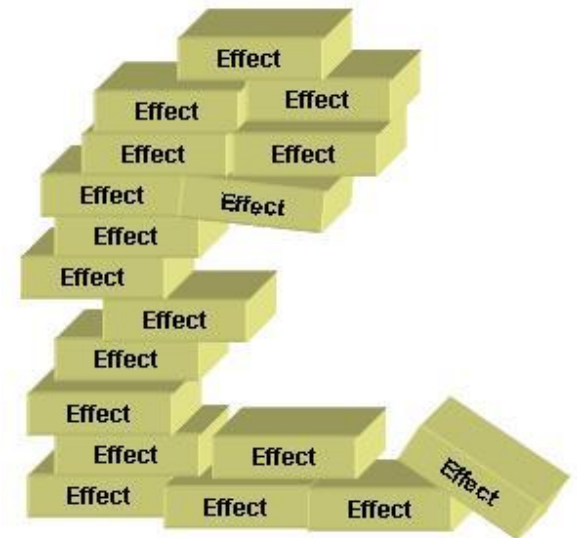


Section (v)(10):

“pilot projects and guidance shall address cumulative and planning watershed impacts”

Our Approach:

- Existing Literature
- THP Section
- Other Processes



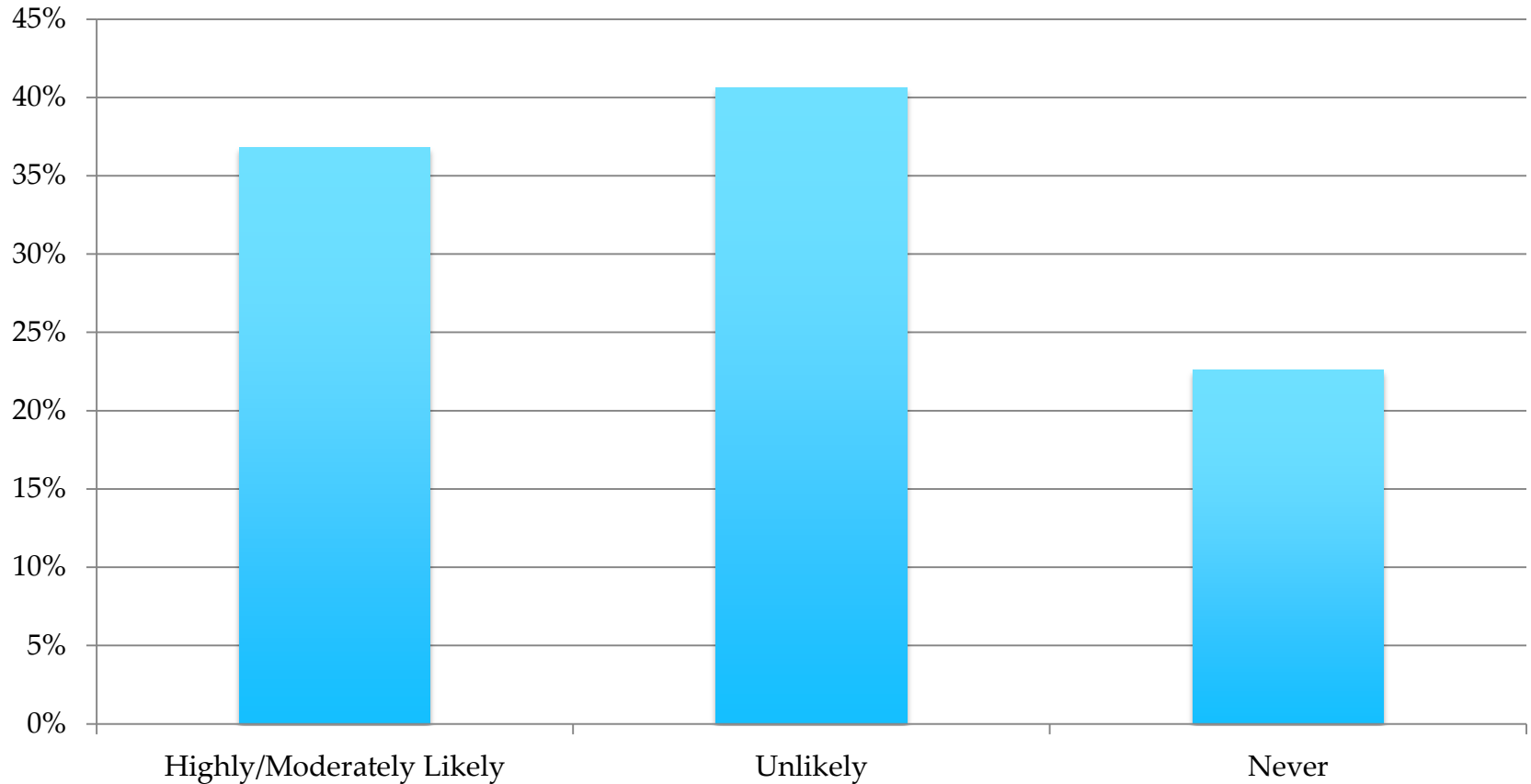


- Offsite Mitigation
 - Collaborative enhancement efforts
 - Promotes priority enhancement sites
- Simplified Permitting
 - Make it easier to do good things
- Set a Track Record
 - Increase willingness to engage by landowners



VTAC Survey Summary

Likelihood to propose project under Section V rule



Stewardship Actions

Carbon
Sequestration

Water
Quality

T&E
Habitat

Pollutant
Trading

Channel
Restoration

**How can we leverage
these markets to
improve incentives
that promote riparian
stewardship?**

Ecosystem Service Markets

Existing Markets

Carbon Market
Conservation Easements
Timber & Pulp

New Markets

TMDL Watersheds
Mitigation Banks



Thank You!



mike@soundwatershed.com